AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1.-194. (Cancelled)

195. (Previously Presented) A method of inhibiting B lymphocytes comprising administering an effective amount of an antibody that binds a protein whose amino acid sequence is

MDDSTEREQS RLTSCLKKRE EMKLKECVSI LPRKESPSVR SSKDGKLLAA TLLLALLSCC LTVVSFYQVA ALQGDLASLR AELQGHHAEK LPAGAGAPKA GLEEAPAVTA GLKIFEPPAP GEGNSSQNSR NKRAVQGPEE TVTQDCLQLI ADSETPTIQK GSYTFVPWLL SFKRGSALEE KENKILVKET GYFFIYGQVL YTDKTYAMGH LIQRKKVHVF GDELSLVTLF RCIQNMPETL PNNSCYSAGI AKLEEGDELQ LAIPRENAQI SLDGDVTFFG ALKLL (SEQ ID NO:2)

wherein B lymphocytes are inhibited.

196. (Previously Presented) A method of inhibiting B lymphocyte proliferation comprising administering an effective amount of an antibody that binds Neutrokine-alpha (SEQ ID NO:2), wherein B lymphocyte proliferation is inhibited.

197. (Previously Presented) A method of inhibiting B lymphocyte differentiation comprising administering an effective amount of an antibody that binds Neutrokine-alpha (SEQ ID NO:2), wherein B lymphocyte differentiation is inhibited.

198. (Previously Presented) The method of any one of claims 195-197, wherein the antibody is a monoclonal antibody.

199. (Previously Presented) The method of any one of claims 195-197, wherein the antibody is recombinantly produced.

200. (Previously Presented) The method of any one of claims 195-197, wherein the antibody is a chimeric antibody.

201. (Previously Presented) The method of any one of claims 195-197, wherein the antibody is a humanized antibody.

202. (Previously Presented) The method of any one of claims 195-197, wherein the antibody comprises human constant domains.

203. (Previously Presented) The method of any one of claims 195-197, wherein the antibody is a F(ab')2 fragment.

204. (Previously Presented) The method of any one of claims 195-197, wherein the antibody is a polyclonal antibody.

205. (Previously Presented) The method of any one of claims 195-197, wherein the antibody is a Fab fragment.

206. (Previously Presented) The method of any one of claims 195-197, wherein the antibody is administered to an individual.

207. (Previously Presented) The method of any one of claims 195-197, wherein the antibody is administered to a cell culture.

208.-221. (Cancelled)

222. (Previously Presented) A method of treating an autoimmune disease or disorder comprising administering to an individual, an effective amount of an antagonistic antibody or portion thereof that specifically binds a protein consisting of the amino acid sequence of amino acid residues 134-285 of SEQ ID NO:2.

223. (Previously Presented) The method of claim 222 wherein the antibody or portion thereof is a monoclonal antibody.

224. (Previously Presented) The method of claim 222 wherein the antibody or portion thereof is a polyclonal antibody.

225. (Previously Presented) The method of claim 222 wherein the antibody or portion thereof is a Fab fragment.

226. (Previously Presented) The method of claim 222 wherein the antibody or portion thereof is labeled.

227. (Previously Presented) The method of claim 226 wherein the label is selected from the group consisting of:

(a) an enzyme label;

(b) a radioisotope;

(c) a fluorescent label; and

(d) biotin.

228. (Previously Presented) The method of claim 227 wherein the label is a radioisotope selected from the group consisting of:

(a) ^{125}I;

(b) ^{121}I;

(c) ^{131}I;

(d) ^{112}In; and

(e) ^{99m}Tc.

229. (Previously Presented) A method of treating rheumatoid arthritis comprising administering to an individual, an effective amount of an antagonistic antibody or portion thereof that specifically binds a protein consisting of the amino acid sequence of amino acid residues 134-285 of SEQ ID NO:2.

230. (Previously Presented) The method of claim 229 wherein the antibody or portion thereof is a monoclonal antibody.

231. (Previously Presented) The method of claim 229 wherein the antibody or portion thereof is a polyclonal antibody.

232. (Previously Presented) The method of claim 229 wherein the antibody or portion thereof is a Fab fragment.

233. (Previously Presented) The method of claim 229 wherein the antibody or portion thereof is labeled.

234. (Previously Presented) The method of claim 233 wherein the label is selected from the group consisting of:

(a) an enzyme label;

(b) a radioisotope;

(c) a fluorescent label; and

(d) biotin.

235. (Previously Presented) The method of claim 234 wherein the label is a radioisotope selected from the group consisting of:

(a) ^{125}I;

(b) ^{121}I;

(c) ^{131}I;

(d) ^{112}In; and

(e) ^{99m}Tc.

236. (Previously Presented) A method of inhibiting B lymphocyte proliferation, differentiation or survival comprising administering to an individual or a cell culture containing B lymphocytes, an effective amount of an antagonistic antibody or portion thereof that specifically binds a protein consisting of an amino acid sequence selected from the group consisting of:

(a) the amino acid sequence of amino acid residues n to 285 of SEQ ID NO:2, where n is an integer in the range of 2-190;

(b) the amino acid sequence of amino acid residues 1 to m of SEQ ID NO:2, where m is an integer in the range of 274 to 284; and

(c) the amino acid sequence of amino acid residues n to m of SEQ ID NO:2, where n is an integer in the range of 2-190 and m is an integer in the range of 274-284.

237. (Previously Presented) The method of claim 236 wherein the protein consists of amino acid sequence (a).

238. (Previously Presented) The method of claim 236 wherein the protein consists of amino acid sequence (b).

239. (Previously Presented) The method of claim 236 wherein the protein consists of amino acid sequence (c).

240. (Previously Presented) The method of claim 236 wherein the antibody or portion thereof is a monoclonal antibody.

241. (Previously Presented) The method of claim 236 wherein the antibody or portion thereof is a polyclonal antibody.

242. (Previously Presented) The method of claim 236 wherein the antibody or portion thereof is a Fab fragment.

243. (Previously Presented) The method of claim 236 wherein the antibody or portion thereof is labeled.

244. (Previously Presented) The method of claim 243 wherein the label is selected from the group consisting of:

(a) an enzyme label;

(b) a radioisotope;

(c) a fluorescent label; and

(d) biotin.

245. (Previously Presented) The method of claim 244 wherein the label is a radioisotope selected from the group consisting of:

(a) ^{125}I;

(b) ^{121}I;

(c) ^{131}I;

(d) ^{112}In; and

(e) ^{99m}Tc.

246. (Previously Presented) A method of inhibiting B lymphocyte proliferation, differentiation, or survival comprising administering to an individual or a cell culture containing B lymphocytes, an effective amount of an antagonistic antibody or portion thereof that specifically binds a protein consisting of the amino acid sequence of amino acid residues 134-285 of SEQ ID NO:2.

247. (Previously Presented) The method of claim 246 wherein the antibody or portion thereof is a monoclonal antibody.

248. (Previously Presented) The method of claim 246 wherein the antibody or portion thereof is a polyclonal antibody.

249. (Previously Presented) The method of claim 246 wherein the antibody or portion thereof is a Fab fragment.

250. (Previously Presented) The method of claim 246 wherein the antibody or portion thereof is labeled.

251. (Previously Presented) The method of claim 250 wherein the label is selected from the group consisting of:

(a) an enzyme label;

(b) a radioisotope;

(c) a fluorescent label; and

(d) biotin.

252. (Previously Presented) The method of claim 251 wherein the label is a radioisotope selected from the group consisting of:

(a) ^{125}I;

(b) ^{121}I;

(c) ^{131}I;

(d) ^{112}In; and

(e) ^{99m}Tc.

253. (Previously Presented) The method of claim 222 wherein the autoimmune disease or disorder is systemic lupus erythematosus.

254. (Previously Presented) A method of treating an autoimmune disease or disorder comprising administering to an individual, an effective amount of an antagonistic antibody or portion thereof that specifically binds to an isolated recombinant Neutrokine-α protein purified from a cell culture wherein the cells in said cell culture comprise a polynucleotide encoding amino acids 1-285 of SEQ ID NO:2 operably associated with a regulatory sequence that controls gene expression.

255. (Previously Presented) The method of claim 254 wherein the antibody or portion thereof is a monoclonal antibody.

256. (Previously Presented) The method of claim 254 wherein the antibody or portion thereof is a polyclonal antibody.

257. (Previously Presented) The method of claim 254 wherein the antibody or portion thereof is a Fab fragment.

258. (Previously Presented) The method of claim 254 wherein the antibody or portion thereof is labeled.

259. (Previously Presented) The method of claim 258 wherein the label is selected from the group consisting of:

(a) an enzyme label;

(b) a radioisotope;

(c) a fluorescent label; and

(d) biotin.

260. (Previously Presented) The method of claim 259 wherein the label is a radioisotope selected from the group consisting of:

(a) ^{125}I;

(b) ^{121}I;

(c) ^{131}I;

(d) ^{112}In; and

(e) ^{99m}Tc.

261. (Previously Presented) The method of claim 254 wherein the autoimmune disease or disorder is systemic lupus erythematosus.

262. (Previously Presented) A method of treating rheumatoid arthritis comprising administering to an individual, an effective amount of an antagonistic antibody or portion thereof that specifically binds to an isolated recombinant Neutrokine-α protein purified from a cell culture wherein the cells in said cell culture comprise a polynucleotide encoding amino acids 1-285 of SEQ ID NO:2 operably associated with a regulatory sequence that controls gene expression.

263. (Previously Presented) The method of claim 262 wherein the antibody or portion thereof is a monoclonal antibody.

264. (Previously Presented) The method of claim 262 wherein the antibody or portion thereof is a polyclonal antibody.

265. (Previously Presented) The method of claim 262 wherein the antibody or portion thereof is a Fab fragment.

266. (Previously Presented) The method of claim 262 wherein the antibody or portion thereof is labeled.

267. (Previously Presented) The method of claim 266 wherein the label is selected from the group consisting of:

(a) an enzyme label;

(b) a radioisotope;

(c) a fluorescent label; and

(d) biotin.

268. (Previously Presented) The method of claim 267 wherein the label is a radioisotope selected from the group consisting of:

(a) ^{125}I;

(b) ^{121}I;

(c) ^{131}I;

(d) ^{112}In; and

(e) ^{99m}Tc.

269. (Previously Presented) The method of claim 236 which comprises administering to an individual an effective amount of said antagonistic antibody or portion thereof.

270. (Previously Presented) The method of claim 236 which comprises administering to a cell culture containing B lymphocytes an effective amount of said antagonistic antibody or portion thereof.

271. (Previously Presented) The method of claim 246 which comprises administering to an individual an effective amount of said antagonistic antibody or portion thereof.

272. (Previously Presented) The method of claim 246 which comprises administering to a cell culture containing B lymphocytes an effective amount of said antagonistic antibody or portion thereof.

273. (Previously Presented) The method of claim 222 wherein said antibody or portion thereof is administered intravenously.

274. (Previously Presented) The method of claim 222 which comprises administering between 0.1 and 20 mg/kg of the patient's body weight of said antibody or portion thereof.

275. (Previously Presented) The method of claim 229 wherein said antibody or portion thereof is administered intravenously.

276. (Previously Presented) The method of claim 229 which comprises administering between 0.1 and 20 mg/kg of the patient's body weight of said antibody or portion thereof.

277. (Previously Presented) The method of claim 254 wherein said antibody or portion thereof is administered intravenously.

278. (Previously Presented) The method of claim 254 which comprises administering between 0.1 and 20 mg/kg of the patient's body weight of said antibody or portion thereof.

279. (Previously Presented) The method of claim 262 wherein said antibody or portion thereof is administered intravenously.

280. (Previously Presented) The method of claim 262 which comprises administering between 0.1 and 20 mg/kg of the patient's body weight of said antibody or portion thereof.

281. (Previously Presented) The method of claim 222, wherein the autoimmune disease or disorder is selected from the group consisting of systemic lupus erythematosus, idiopathic thrombocytopoietic purpura (ITP), Sjogren's syndrome, Waldenstrom's macroglobulinaemia, multiple sclerosis, cancer, asthma, nephritis, diabetes, scleroderma, vasculitis, cryoglobulinaemia, graft-versus-host disease (GVHD), renal transplantation, and antiphospholipid syndrome.

282. (Previously Presented) The method of claim 281, wherein the antibody or portion thereof is a monoclonal antibody.

283. (Previously Presented) The method of claim 281, wherein the antibody or portion thereof is a polyclonal antibody.

284. (Previously Presented) The method of claim 281, wherein the antibody or portion thereof is a Fab fragment.

285. (Previously Presented) The method of claim 281, wherein the antibody or portion thereof is labeled.

286. (Previously Presented) The method of claim 285, wherein the label is selected from the group consisting of:

(a) an enzyme label;

(b) a radioisotope;

(c) a fluorescent label; and

(d) biotin.

287. (Previously Presented) The method of claim 286, wherein the label is a radioisotope selected from the group consisting of:

(a) ^{125}I;

(b) ^{121}I;

(c) ^{131}I;

(d) ^{112}In; and

(e) ^{99m}Tc.

288. (Previously Presented) The method of claim 254, wherein the autoimmune disease or disorder is selected from the group consisting of systemic lupus erythematosus, idiopathic thrombocytopoietic purpura (ITP), Sjogren's syndrome, Waldenstrom's macroglobulinaemia, multiple sclerosis, cancer, asthma, nephritis, diabetes, scleroderma, vasculitis, cryoglobulinaemia, graft-versus-host disease (GVHD), renal transplantation, and antiphospholipid syndrome.

289. (Previously Presented) The method of claim 281, wherein the antibody or portion thereof is administered intravenously.

290. (Previously Presented) The method of claim 281, wherein the method comprises administering between 0.1 and 20 mg/kg of the patient's body weight of the antibody or portion thereof.

291. (Previously Presented) The method of claim 281, wherein the autoimmune disease or disorder is idiopathic thrombocytopietic purpura (ITP).

292. (Previously Presented) The method of claim 281, wherein the autoimmune disease or disorder is Sjogren's syndrome.

293. (Previously Presented) The method of claim 281, wherein the autoimmune disease or disorder is multiple sclerosis.

294. (Previously Presented) The method of claim 281, wherein the autoimmune disease or disorder is renal transplantation.

295. (Previously Presented) The method of claim 288, wherein the autoimmune disease or disorder is systemic lupus erythematosus.

296. (Canceled)

297. (Previously Presented) The method of claim 288, wherein the autoimmune disease or disorder is idiopathic thrombocytopietic purpura (ITP).

298. (Previously Presented) The method of claim 288, wherein the autoimmune disease or disorder is Sjogren's syndrome.

299. (Previously Presented) The method of claim 288, wherein the autoimmune disease or disorder is multiple sclerosis.

300. (Previously Presented) The method of claim 288, wherein the autoimmune disease or disorder is renal transplantation.

301. (Previously Presented) A method of treating an autoimmune disease in an animal comprising administering a therapeutically effective amount of an anti-Neutrokine-alpha antibody that binds to human Neutrokine alpha polypeptide having the amino acid sequence of SEQ ID NO:2.

302. (Previously Presented) The method of claim 301, wherein the antibody is a monoclonal antibody.

303. (Previously Presented) The method of claim 301, wherein the antibody is recombinantly produced.

304. (Previously Presented) The method of claim 301, wherein the antibody is a chimeric antibody.

305. (Previously Presented) The method of claim 301, wherein the antibody is a humanized antibody.

306. (Previously Presented) The method of claim 301, wherein the antibody comprises human constant domains.

307. (Previously Presented) The method of claim 301, wherein the antibody is a F(ab')2 fragment.

308. (Previously Presented) The method of claim 301, wherein the animal is human.

309. (Previously Presented) The method of claim 301, further comprising detecting the levels of B cell growth and immunoglobulin production in the animal.

310. (Cancelled)

311. (Previously Presented) The method of claim 301, further comprising detecting the level of B cell growth in the animal.

312. (Previously Presented) The method of claim 301, further comprising detecting the level of immunoglobulin production in the animal.

313.-353. (Cancelled)

354. (Previously Presented) The antibody (15C10) produced by the hybridoma of ATCC Deposit Number PTA-1158.

355. (Previously Presented) An antibody or fragment thereof that competitively inhibits the binding of the antibody of claim 354 to the protein of SEQ ID NO: 2.

356. (Previously Presented) An antibody or fragment thereof that binds the same epitope as the antibody of claim 354.

357. (Previously Presented) The antibody or fragment thereof of claim 356, wherein the epitope comprises amino acid residues 227-242 of SEQ ID NO: 2.

358. (Previously Presented) The antibody or fragment thereof of claim 356, wherein the epitope comprises amino acid residues 230-245 of SEQ ID NO: 2.